

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	1,118	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD
1011 Legacy Model Transition (LMT)	382	0	0	0	0	0	0	Continuing	TBD
4566 Executive Agent for Air/Space Natural Environment	736	0	0	0	0	0	0	Continuing	TBD
5052 JTC/SIL MUSE	0	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY2002, Project 671011, Legacy Model Transition (LMT) and Project 674566, Executive Agent for Air/Space natural Environment efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675004, Joint Model Transition (JMT) and Project 675005, Executive Agent For Air/Space Natural Environment, in order to consolidate small dollar Modeling, Simulation, and Analysis (MS&A) R&D programs. This will meet the intent of the House action to eliminate smaller PEs and provide a more cohesive, manageable USAF Modeling and Simulation development effort.

In, FY2003, Project 675052, JTC/SIL MUSE efforts were transferred from PE 03052051F, Endurance Unmanned Aerial Vehicles, Project 674883, JTC/SIL MUSE in order to comply with 1999 PBD 220

(U) **A. Mission Description**

This PE includes funding to support an organized growth and management of modeling and simulation (M&S) systems as the Air Force transitions from numerous legacy models and simulations to emerging DoD standard models and architecture. Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as the Legacy Model Transition) funds the upgrades to selected R&D models through a board process. The selection process allows the board to influence the direction of legacy model development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. The Executive Agent for Air & Space Natural Environment (ASNE) serves the M&S community as subject matter experts for ASNE M&S databases (including relevant standards), dynamic processes, and other applications. This enables the major Joint simulation systems (i.e., Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0308601F Modeling and Simulation Support(U) **A. Mission Description Continued**

Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Ballistic Missile Defense Organization (BMDO), etc.) to represent the air and space natural environment rapidly, thoroughly, and consistently in a manner that promotes cost-effectiveness, ready access, interoperability, re-use, and confidence. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.

All FY02-07 RDT&E funding in PE: 38601F - 'Modeling and Simulation Support' will be transferred to PE: 27601F - 'USAF Modeling and Simulation'. In the interim, FY01 RDT&E funding in PE: 38601F is needed to continue integrating and developing numerous AF models and simulations into emerging DoD standard models and architecture. Added, FY01 PE: 38601 RDT&E funding provides modeling and simulation development efforts to digitally represent air and space natural environments integrated into the major Joint simulation systems (ie. Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS)).

(U) **B. Budget Activity Justification**

This program is in budget activity 7 - Operational System Development, because these funds support development activity for the AF as executive agent for air/space natural environment and continued development and integration of AF models in the Joint Model Transition (JMT) program.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	1,177	0	1,995	TBD
(U) Appropriated Value	1,177	0		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research	-36			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-11			
e. Rescissions	-12			
(U) Adjustments to Budget Years Since FY 2002 PBR			0	
(U) Current Budget Submit/FY 2003 PBR	1,118	0	1,995	TBD
(U) <u>Significant Program Changes:</u>				
FY00 funding eliminated.				

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support				PROJECT 1011	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1011 Legacy Model Transition (LMT)	382	0	0	0	0	0	0	Continuing	TBD
<p>In, FY2002, Project 671011, Legacy Model Transition (LMT) efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675004, Joint Model Transition (JMT) in order to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <u>A. Mission Description</u> Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as Legacy Model Transition) supports the development and upgrade of R&D models selected through a board process. The selection process allows the board to influence the direction of model development and integration for the modeling and simulation community. Emphasis is placed on joint applicability and acceptance. All FY02-07 RDT&E funding in PE: 38601F will be transferred to PE: 27601F, titled 'USAF Modeling and Simulation'.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$151 Develop and integrate service analysis models into next generation joint models. (U) \$151 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM). (U) \$80 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapon system developments and/or upgrades.</p> <p>(U) \$382 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>B. Project Change Summary</u> Project transferred to PE27601F for FY02</p>									
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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					PROJECT 1011	
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E								Continuing		Continuing	
(U) Other APPN											
N/A											
(U) D. Acquisition Strategy The funds are provided to the Office of Aerospace Studies (OAS), GSA-Heartland Contract, and the Sherikon Corp for the development of the Next Generation Mission Model (NGMM), Joint Model Transition Plan, and Analysis of Alternatives (AoA) studies for analysis models and digital system models. AF/XOCA will oversee a prioritization process for contract selection and development effort.											
(U) E. Schedule Profile											
				<u>FY 2001</u>				<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3	4	1
(U) Fund Next Generation Mission Model project (Phase I completed 1QFY99)			X								
(U) Develop AoA studies for standard toolkit (Phase I completed 1QFY99)			X								
(U) Integrate models (P1 completed 4QFY99)							X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0308601F Modeling and Simulation Support				1011	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Contractor Support				306					
(U)	Program Management Support				30					
(U)	Travel				46					
(U)	Total				382					
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>		<u>Contract</u>								
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>		
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		
<u>Product Development Organizations</u>										
Various		Various		Various		0		382		
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>		<u>Budget</u>		<u>Budget</u>	
					<u>to FY 2001</u>		<u>FY 2001</u>		<u>FY 2002</u>	
							<u>FY 2003</u>		<u>Budget to</u>	
									<u>Complete</u>	
									<u>Total</u>	
									<u>Program</u>	
<u>Subtotals</u>					0		382		TBD	
Subtotal Product Development									TBD	
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0		382		TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support				PROJECT 4566	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4566 Executive Agent for Air/Space Natural Environment	736	0	0	0	0	0	0	Continuing	TBD
<p>In FY2002, Project 674566, Executive Agent for Air/Space Natural Environment efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675005, Executive Agent For Air/Space Natural Environment to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <u>A. Mission Description</u> Air Force Director of Weather (AF/XOW) is designated as the DoD Modeling and Simulation Executive Agent (MSEA) for Air and Space Natural Environment (ASNE). This program provides funds for MSEA joint wargaming architecture, data base, model development support for Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and other joint M&S program offices. Primary users will be unified commanders and service components for use in joint exercises involving air, ground, sea, and space campaigns. All FY02-07 RDT&E funding in PE: 38601F will be reprogrammed in the FY02-07 POM cycle to PE: 27601F, titled 'USAF Modeling and Simulation'.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$128 Space weather prototyping and integration (U) \$505 Production center model development (U) \$103 Air/Space/Land battlefield weather effects integration (U) \$736 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>B. Project Change Summary</u> Project transferred to PE27601F for FY02</p>									
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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					PROJECT 4566		
(U) C. Other Program Funding Summary (\$ in Thousands)												
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E								Continuing	Continuing			
(U) Other APPN												
(U) D. Acquisition Strategy The Executive Agent for Air & Space Natural Environment will develop, prototype, and integrate the current suite of production and research grade models for Service and Joint distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.												
(U) E. Schedule Profile												
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Architecture - ESG IOC (Completed 3QFY99)												
(U) Architecture - ESG FOC												
(U) Models - CSSMS FOC												
(U) Models - ISM IOC												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0308601F Modeling and Simulation Support				4566	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U) Software Development					211					
(U) Lab Overhead/Management					80					
(U) Prototyping					420					
(U) Travel					25					
(U) Total					736					
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>		<u>Contract</u>								
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>		
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2001</u>
<u>Product Development Organizations</u>										
Various		Various		Various				736		
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>		<u>Budget</u>		<u>Budget</u>	
					<u>to FY 2001</u>		<u>FY 2001</u>		<u>FY 2002</u>	
							<u>FY 2003</u>		<u>Budget to</u>	
									<u>Complete</u>	
									<u>Total</u>	
<u>Subtotals</u>										
Subtotal Product Development							736		TBD	
Subtotal Support and Management									TBD	
Subtotal Test and Evaluation										
Total Project							736		TBD	

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07 - Operational System Development

PE NUMBER AND TITLE

0308601F Modeling and Simulation Support

PROJECT

5052

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5052 JTC/SIL MUSE	0	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD

In, FY2003, Project 675052, JTC/SIL MUSE efforts transferred from PE 03052051F, Endurance Unmanned Aerial Vehicles, Project 674883, JTC/SIL MUSE in order to comply with 1999 PBD 220

(U) **A. Mission Description**

The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides and develops simulations of UAVs, their tactical and strategic reconnaissance uses and how their imagery products are used in the DoD reconnaissance system. These simulations are applied for the development of the Army's tactical UAV (TUAV), the Navy's vertical takeoff UAV (VTUAV), Air Force's Predator medium altitude endurance UAV (EUAV) and the Air Force's Global Hawk high altitude EUAV.

(U) **FY 2001 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$1,995 JTC/SIL MUSE

(U) \$1,995 Total

(U) **B. Project Change Summary**

A separate project code within PE 38601F provides visibility of the funds supporting the JTC/SIL MUSE. This account serves as a holding location for funds support this Joint effort.

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					PROJECT 5052		
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>												
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E								Continuing	Continuing			
(U) Other APPN												
(U) <u>D. Acquisition Strategy</u>												
N/A												
(U) <u>E. Schedule Profile</u>												
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Activity TBD												

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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
07 - Operational System Development					0308601F Modeling and Simulation Support					5052
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					FY 2001		FY 2002		FY 2003	
(U) JTC/SIL MUSE									1,995	
(U) Total									1,995	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>		<u>Contract</u>								
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>		
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		
<u>Product Development Organizations</u>					<u>Total Prior</u>		<u>Budget</u>		<u>Budget</u>	
JTC/SIL MUSE					to FY 2001		FY 2001		FY 2002	
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>		<u>Budget</u>		<u>Budget</u>	
<u>Subtotals</u>					to FY 2001		FY 2001		FY 2002	
Subtotal Product Development									1,995	
Subtotal Support and Management									TBD	
Subtotal Test and Evaluation										
Total Project									1,995	
									TBD	
									TBD	

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